

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

I. Status of the Claims and Amendments

This amendment cancels claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

Claim 17 is requested to be canceled without prejudice or disclaimer.

Upon cancellation of claim 17, claims 1, 2, and 4-16 will be pending, and claims 13-16 are withdrawn. Thus, claims 1, 2, and 4-12 are pending and subject to examination on the merits.

II. Restriction

The Office Action withdraws claim 13-16 from consideration. According to the Office Action, claims 13-16 and the other claims are related as combination and subcombination and constitute distinct inventions. Applicant respectfully traverses this restriction requirement.

The instant restriction requirement is not proper because examination of all claims does not constitute a “serious burden.” As stated in the MPEP, “[i]f the search and examination of all the claims in an application can be made without serious burden, the examiner must examine them on the merits, even though they include claims to independent or distinct inventions.” MPEP § 803 (emphasis added). Here, search and examination of all claims would not constitute a “serious burden,” because the searches necessary to examine both groups of claims would be largely coextensive. There has been no showing as to why examination of all claims constitutes a “serious burden.” For at least this reason, Applicant respectfully requests withdrawal of this restriction requirement.

Applicant reserves the right to file a divisional application to pursue the subject matter of claims 13-16.

III. Allowable Subject Matter

The Office Action indicates that claim 12 is allowed and that claim 7 would be allowed if rewritten in independent form.

Applicants appreciate the Examiner's indication of allowable subject matter. However, as discussed below, Applicants believe that all pending claims are allowable.

IV. Claim Rejections – 35 U.S.C. § 103

A. U.S. Patent No. 5,214,386 to Singer *et al.*

Claims 1, 2, 4-6, 8, 10, 11, and 17 stand rejected under 35 U.S.C. § 103 as allegedly obvious over U.S. Patent No. 5,214,386 to Singer *et al.* ("Singer"). Applicant respectfully traverses this ground of rejection.

The claimed invention is directed to an apparatus for characterizing a particle comprising both "an electrical charge sensor adapted to determine an electrical charge on the particle" and "an optical device adapted to determine a second characteristic of the particle." The claimed invention is also directed to a method of characterizing a particle comprising "measuring charge on the particle, measuring an optical characteristic of the particle, and providing an output indicative of the nature of the particle from the combination of both the charge and the optical characteristic." Thus, the charge and optical characteristics of the particle are not considered in isolation. Instead, these two items of information are used together in order to determine the nature of the particle. For example, the information is used to determine the specific identity of a hazardous biological substance. *See e.g.*, spec. at pgs. 5-6. Thus, the claimed invention provides an improved indication of the nature of particles by combining information derived in two different ways.

Singer cannot render obvious the claimed invention, because Singer does not teach or suggest an apparatus for characterizing a particle comprising both "an electrical charge sensor

adapted to determine an electrical charge on the particle" and "an optical device adapted to determine a second characteristic of the particle," as claimed. Instead, Singer discloses only a sensor for measuring the charge of particles. Singer's apparatus lacks an "optical device."

Singer references "optical measuring processes" in the Background section. But these "optical measuring processes" are disclosed as a technique alternative to Singer's electrical charge detection. Singer contains no teaching or suggestion to use any technique in combination with its electrical charge technique, much less a teaching or suggestion to use an optical device.

The Office Action recognizes this deficiency in Singer. Nonetheless, the Office Action argues that it would have been obvious to use an optical device in combination with Singer's electrical charge sensor. The Office Action argues that "[i]t would have been obvious ... to modify Singer et al. to incorporate the use of a conventional optical device, for measuring particle sizes greater than 0.1 micron, so as to measure a second characteristic, such as particle size, for comparison purposes." As support for this argument, the Office Action cites Singer at col. 5, lines 18-21.

However, the passage cited expressly discounts optical techniques. Specifically, Singer states as follows:

The volume of air to be analyzed by sensor unit 11 can be up to 0.1 m³/sec with the appropriate diameter of measuring pipe 17, which means *a marked improvement of the analysis time or the analysis volume in comparison with known optical processes.*

Singer at col. 5, ll. 18-21 (emphasis added). Thus, Singer teaches that its sensor, which detects the electrical charge of particles, offers "a marked improvement" over "known optical processes." Rather than motivate a skilled artisan to employ an optical device, this teaching expressly discourages the use of such a device as inferior to the electric charge sensor. The purported reason to use an optical device, to measure particle sizes greater than 0.1 micron, is illusory. Singer does not teach that its electrical charge sensor cannot measure particle sizes

greater than 0.1 micron, so one of skill in the art would have no reason to employ an optical device, which is disclosed as inferior, in combination with an electrical charge sensor.¹

Singer's teaching away from optical devices is consistent with Singer's other teachings. Specifically, Singer discredits optical measurements as "expensive" and "difficult or impossible" in some cases. Singer at col. 1, ll. 16-22. Thus, Singer, including the passage cited by the Office Action, only highlights the lack of motivation to combine both "an electrical charge sensor" and "an optical device adapted to determine a second characteristic of the particle." In fact, Singer's repeated criticism of optical devices constitutes a teaching away from the claimed invention. Because Singer teaches away from the claimed invention, it is improper to modify Singer to arrive at the claimed invention. *See MPEP § 2145(X)(D)(2)* ("It is improper to combine references where the references teach away from their combination").

For at least these reasons, Applicant respectfully requests reconsideration and withdrawal of this ground of rejection.

B. Singer In View Of Allegedly Admitted Prior Art

Claim 9 stands rejected under 35 U.S.C. § 103 as allegedly obvious over Singer in view of "Applicant's admitted prior art (see specification page 5, lines 13-14)." Office Action at 5. Applicant respectfully traverses this ground of rejection.

Singer and the allegedly admitted prior art fail to render obvious claim 9 for the same reasons that Singer fails to render obvious claim 1, as discussed above in Section IV(A).² Specifically, Singer does not teach or suggest an apparatus for characterizing a particle comprising both "an electrical charge sensor adapted to determine an electrical charge on the particle" and "an optical device adapted to determine a second characteristic of the particle," as claimed. Thus, even assuming *arguendo* that there is motivation to modify Singer to

¹ The Background section notes that measurement of particle sizes less than 0.1 micron by "known optical processes" is difficult or impossible. However, Singer does not teach that electrical charge cannot be used to measure particle sizes greater than 0.1 micron.

² Claim 9 depends from claim 5, which depends from claim 4, which depends from claim 1. Thus, claim 9 ultimately depends from claim 1.

include a "filter adapted to prevent particles greater than substantially 10 μm from entering the tube," Singer still does not teach or suggest each and every element of the claimed invention. Accordingly, Singer fails to render obvious claim 9.

For at least this reason, Applicant respectfully requests reconsideration and withdrawal of this ground of rejection.

CONCLUSION

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

By



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